

Notice of Allowability

Application No.

09/814,423

Examiner

Naresh Vig

Applicant(s)

YAMAMOTO ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 22 June 2005.
2. ☒ The allowed claim(s) is/are 1,3,4,9 and 11-17.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Naresh Vig
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DETAILED ACTION

This is in reference to response received 22 June 2005 to the office action mailed 20 May 2005.

Drawings

The drawings have been approved by the examiner.

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such amendment, it **MUST** be submitted no later than the payment of the issue date.

Authorization for the examiner's amendment was given in a telephone interview with Mark A. Sockon (Reg. No. 40,823) on 07 September 2005.

After the examiner's amendment, claims 1, 3 – 4 and 9 has been amended, and, claims 2, 6 and 7 have been cancelled. There are 11 claims, claims 1, 3 – 4, 9 and 11 – 17 pending in the application.

After examiner's amendment, the pending claims reads as follows:

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1. An apparatus for managing storage access, comprising:

a disk system including multiple storage devices capable of being coupled to a host system via interface ports and a data communication channel;

time components comprising time zone information;

a disk system manager operative to control accessibility by the host system to the multiple storage devices based upon a service level agreement and the time component, the service level agreement specifying billing rates based upon the time components, the disk system manager capable of being coupled to the host system via a control communication channel that is different from the data communication channel;

a storage access service system operative to grant time-based host system access to said multiple storage devices and to compute invoice amounts based upon the time component and the service level agreement, and wherein said storage access service system determines charges for user access by comparing said preset schedule to a billing rate schedule and thereupon computing a cost of said preset schedule; and

means for users to agree to access at least one of said storage devices during a preset schedule, and wherein said storage access service system determines charges for user access service based upon said preset schedule.

3. The apparatus of claim 1, wherein said storage access service system determines charges for user access based upon a history of accesses.

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4. The apparatus of claim 3, wherein said storage access service system determines charges by comparing said history of accesses to a billing rate schedule and thereupon computing a cost of access by summing a cost for each access according to said billing rate schedule.

9. The apparatus of claim 1, wherein said storage access service system determines charges by comparing said preset schedule to a billing rate schedule to determine an applicable billing rate, and thereupon computing a cost of said preset schedule in a billing cycle.

11. A method for managing access to storage resources in a system having a plurality of tables, comprising:

storing user information including an identity of a user an identity of a resource, a time zone, and at least one billing rate for accessing said resource in a first table of the plurality of tables the at least one billing rate being dependent on a predetermined time component in accordance with a service level agreement;

receiving a computer-based request to access said resource from a user;

granting access to said resource based upon said identity of said user, said identity of said resource, the time of the request, and said time zone using the first table said granting including enabling the user to access the resource via a data communication channel;

using a control communication channel to map the resource to the user;

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storing access information including said identity of said user, said identity of said resource, and said time zone in a second table of said plurality of tables; and

determining charges for accessing said resource based upon said identity of said user, said identity of said resource, the time of the access, and said at least one billing rate using the first table and the second table.

12. The method of claim 11, further comprising: logging individual instances of access to said resource into a history of accesses in said second table.

13. The method of claim 12, wherein determining charges for a user based upon individual instances of access by said user of said resource, said time zone, and said at least one billing rate comprises:

determining a usage time for each individual instance of access selected from said history of accesses;

determining a billing rate corresponding to said usage time from among said at least one billing rate; and

computing a cost by summing a cost for each individual instance of access selected from said history of accesses, said cost computed by multiplying said usage time by said billing rate corresponding to said usage time.

14. The method of claim 13, wherein said at least one billing rate corresponds to at least one of a plurality of time periods for said time zone, and wherein determining

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a billing rate corresponding to said usage time from among said at least one billing rate comprises:

comparing said individual instances of accesses logged into said history of accesses to said plurality of time periods to select a billing rate corresponding to said usage time from among said at least one billing rate.

15. The method of claim 11, wherein said user agrees to access said resource at a time period in accordance with a preset schedule; and wherein said granting access to said resource based upon said identity of said user, said identity of said resource, and said time zone comprises:

granting said user access to said resource within said time period in accordance with said preset schedule.

16. The method of claim 15, wherein said at least one billing rate for accessing said resource corresponds to at least one of a plurality of time periods for said time zone, and wherein determining charges for accessing said resource based upon said identity of said user, said identity of said resource, said at least one billing rate, and said time period comprises:

selecting from among a plurality of billing rates a billing rate corresponding to said time period in accordance with said preset schedule; and

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computing a cost of access by summing a cost for each individual instance of said time period in accordance with said preset schedule multiplied by said billing rate corresponding to said time period in accordance with said preset schedule.

17. The method of claim 15, wherein said at least one billing rate for accessing said resource corresponds to at least one of a plurality of time periods for said time zone, and wherein determining charges for accessing said resource based upon said identity of said user, said identity of said resource, said at least one billing rate, and said time period comprises:

selecting from among a plurality of billing rates a billing rate corresponding to said time period in accordance with said preset schedule; and

computing a cost of access by multiplying said billing rate corresponding to said time period by a number of instances of said time period occurring in a billing cycle in said preset schedule.

Allowable Subject Matter

Claims 1, 3 – 4, 9 and 11 – 17 allowed.

In claim 1, applicant claims an apparatus for managing storage access which provides:

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a disk system including multiple storage devices capable of being coupled to a host system via interface ports and a data communication channel;

time components comprising time zone information;

a disk system manager operative to control accessibility by the host system to the multiple storage devices based upon a service level agreement and the time component, the service level agreement specifying billing rates based upon the time components;

a storage access service system operative to grant time-based host system access to said multiple storage devices and to compute invoice amounts based upon the time component and the service level agreement; and

means for users to agree to access at least one of said storage devices during a preset schedule, and wherein said storage access service system determines charges for user access service based upon said preset schedule.

In claim 11, applicant claims method for managing access to storage resources in a system having a plurality of tables by:

storing user information including an identity of a user an identity of a resource, a time zone, and at least one billing rate for accessing said resource in a first table of the plurality of tables the at least one billing rate being dependent on a predetermined time component in accordance with a service level agreement;

receiving a computer-based request to access said resource from a user;

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granting access to said resource based upon said identity of said user using the first table said granting including enabling the user to access the resource via a data communication channel;

using a control communication channel to map the resource to the user;

storing access information including said identity of said user, said identity of said resource, and said time zone in a second table of said plurality of tables; and

determining charges for accessing said resource based upon said identity of said user and said at least one billing rate using the first table and the second table.

Prior art Lumelsky teaches managing storage access, a disk system, a disk system manager, operative to manage information storage to and retrieval from said disk system, and a storage access service system operative to grant authorization to access said disk system.

Lumelsky does not teach time components comprising time zone information, a disk system manager operative to control accessibility by the host system to the multiple storage devices, grant time-based host system access comprising time zone information, storage access service system determines charges for user access service based upon said preset schedule, compute invoice amounts based upon the time component and the service level agreement

Prior art Coyote teaches billing and pricing based upon time to control the peak demand during the normal business hours (time zone information), determines charges

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for user access service based upon time zone information, compute invoice amounts based upon the time component and the service level agreement.

Lumelsky does not teach a disk system manager operative to control accessibility by the host system to the multiple storage devices, grant time-based host system access comprising time zone information, determines charges for user access service based upon said preset schedule.

Prior art Stumm teaches system and method for operating a server system adapted to provide information files to a plurality of subscribers over communications network. Stumm teaches that each publisher is allowed to control the times which a subscriber is scheduled to access server system 20.

Stumm does not teach grant time-based host system access comprising time zone information, determines charges for user access service based upon said preset schedule.

Prior art Hoese teaches storage network that provides virtual local storage and implements access control for storage space on the storage device. Storage router allows access from the workstations to the storage devices in accordance with the mapping and access controls.

Hoese does not teach grant time-based host system access comprising time zone information, determines charges for user access service based upon said preset schedule.

Any comments considered necessary by the applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Naresh Vig whose telephone number is (571) 272-6810. The examiner can normally be reached on M-F 7:30 - 6:00 (Wednesday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Weiss can be reached on (571) 272-6812. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Naresh Vig
Examiner
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September 9, 2005